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A BIMONTHLY PUBLICATION DEVOTED TO THE STUDY OF BEETLES
The Coleopterists' Bulletin

Volume X

April, 1956

No. 2

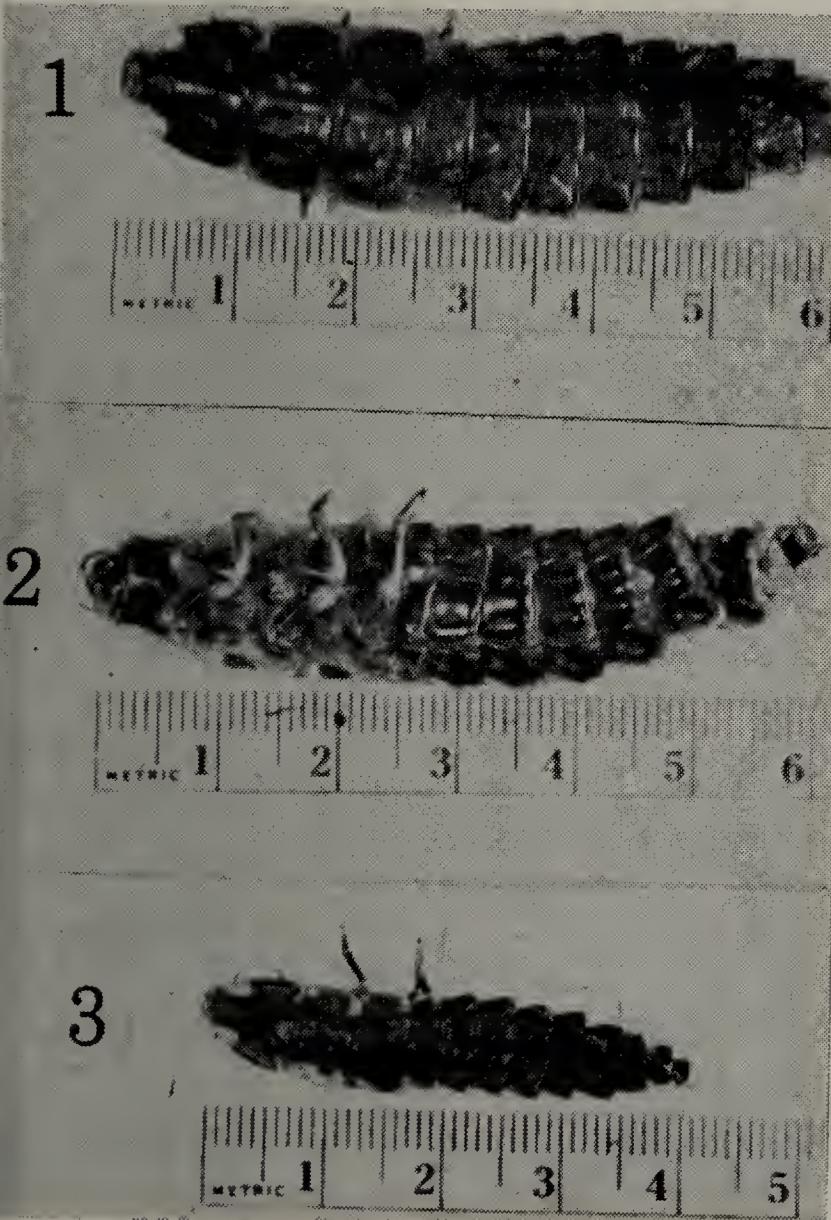
Published bimonthly beginning with February by the DEPARTMENT OF BIOLOGY, SAINT JOHN FISHER COLLEGE, Rochester 18, New York. Terms of subscription: \$4.00 per year, both domestic and foreign, payable in advance. Back numbers are available.

The general policies of The Coleopterists' Bulletin are determined on the recommendation of the following Advisory Board: Dr. Ross H. Arnett, Jr., Head, Department of Biology, St. John Fisher College; Dr. Henry Dietrich, Professor of Entomology, Cornell University; Dr. J. Gordon Edwards, Professor of Entomology, San Jose State College; Dr. Eugene J. Gerberg, Insect Control and Research, Inc., Baltimore, Md.; Dr. Melville H. Hatch, Professor of Zoology, University of Washington, and Mr. George B. Vogt, Entomologist, U. S. Department of Agriculture. Edited by Ross H. Arnett, Jr.

GIGANTIC GLOWWORMS FROM SOUTH AMERICA.

By FRANK A. McDERMOTT¹

In 1923 Barber² described "A Remarkable Wingless Glow-worm from Ecuador," which he very tentatively identified as the apterous female of



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FIG. 1. Dorsal view of the 60 mm. larva. FIG. 2. Ventral view of the 65 mm. larva. FIG. 3. Dorsal view of the 40 mm. larva. (Photographs taken with a $2\frac{1}{4} \times 3\frac{1}{4}$ Eastman Kodak set at infinity, with an accessory lens of 105 mm. focal length, Panatomic X film, f. 32, 20 secs. exposure under illumination of two 75-watt inside-frosted lamps in reflectors about 12 ins. from the object and directed at an angle of about 45° .)

¹Wilmington, Delaware.

²Barber, Herbert S.; *Insecutor Inscitiae Mentrus*, Vol. XI, pp. 191-194. 1 pl.

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Phaenolis abditus E. Oliv. This female was 35 mm. long; an accompanying larva was 40 mm. long, and both had been taken at altitudes of 2500-3000 meters. Barber also mentions a larva 50 mm. long taken in Chile and originally questionably referred to the female of *Cladodes ater* Solier, though regarded by Barber as more probably the larva of a species of *Calyptocephalus* or of a *Pleotomus*-like form. I have recently received from Sr. Luis E. Peña, Santiago, Chile, three very large lampyrid larvae measuring 65, 60, and 40 mm. long; these were taken at Recinto, Nuble Prov., and El Coigual, Curico Prov., at altitudes of probably around 1500-2000 meters. They are apparently all of the same species, and are not adult females; they differ from the specimens described by Barber. A similar larva, but only 19 mm. long, taken at Estero de Leiva, Parral, was sent to me by Sr. Peña in a previous shipment.

The greater part of the dorsum of the 60 mm. larva is a somewhat shiny black, but the pronotum, which is parabolic in outline, 11 mm. long by 13 mm. wide at the base, bears a submarginal oval yellow spot on each side in the apical 3d, and the rounded posterior angles are narrowly bordered yellow. The edges of the meso- and metanota are bordered pink, and the expanded lateral lobes of these segments are ventrally pink, each with a narrow triangular black spot pointing posteriorly. The first abdominal segment is also narrowly bordered pink dorsally, while the 2nd to the 7th segments, except for very narrow lateral edges and some indefinite median spots which are pinkish yellow, are black; the 8th has a narrow yellow apical margin, and the small, almost squarely truncate 9th segment has small yellow postero-lateral points. Ventrally, in addition to the pink meso- and metathoracic segment, there is a little pink on the prosternum; the under sides of the lobes of the tergites are yellow. The 7th sternite has a yellow apical edge, while the 8th is mostly yellow and bears two lateral luminous organs. The ventral portion of the 5th and 6th segments is missing. The meso- and metanota are 15 mm. wide, the first five abdominal segments 15 to 14 mm., after which they measure 12, 10, 7.5, and 5 mm. wide respectively. The 8th is somewhat sinuate apically, the others almost straight.

The 65 mm. larva is broken, the last three segments being detached, but it is generally very similar to the 60 mm. specimen; the pink margins of the thoracic segments are broader, and the pinkish-yellow borders of the abdominal segments are more pronounced. The 40 mm. specimen is similar to the 65 mm. one, and these two are from the same locality, El Coigual. The 19 mm. specimen was at first thought to be possibly the larva of *Pyractonema depressicornis*, but it is evidently a juvenile stage of the giant larvae.

The head of the larva is very much retracted into the pronotum, but the 4.6 mm. long, very slender, dark reddish brown mandibles are visible; they are somewhat more curved than in Barber's Ecuador larva, and are directed slightly upwards. The antennae are 4-jointed, the 2nd article being short, the 3d about twice as long, and the 4th again short; the 2nd and 3d are black above and white below, while the 4th is reddish brown, cylindrical, and appears to have a minute apical appendage. There are 2 or 3 long setae on the 3d and 4th articles. Maxillary palpi are short, 4-jointed, reddish brown, and slightly compressed, so that the apical edge of the 4th is a dull, almost straight line. The labial palpi are 2-jointed, brown, the 1st article cylindrical, the 2nd a narrow acute cone. While the structure of these mouth parts is obviously similar to Barber's drawing, there are some differences. The claws are single, very stout. The legs bear several rows of sharp red spines, particularly on the inner side. The abdominal spiracles are on the ventral surface of the lateral lobes, and appear as a slit in a yellow bead, set in a small membranous area.

The disparity in size between the male, 11 mm. long, and the female, 35 mm., of *Phaenolis abditus*, assuming Barber's tentative identification to be correct, is really not so surprising; for instance in *Phengodes lati-collis* the males are 15-17 mm. long, while the larviform females may be 50 mm. For other comparisons, *Photinus xanthophotis*, of Jamaica, may be 20 mm. long; the one larva so far found was 32 mm. long; the apterous female of *Pleotomus davisii* is 16-18 mm. long, and the male probably about 12-15 mm., but the larvae may be up to 30 mm. long. While no species of *Cratomorphus* has apparently been reported from Chile, it would seem possible that these very large larvae might be referable to that genus, in which the adults may be 28-30 mm. long. In the adult *Cratomorphus* the spiracles are not ventral, but it does not follow that they may not be ventral in the larvae. It would be interesting to know on what forms these large larvae prey.

As indicated in Barber's paper, collectors in the higher altitudes in Chile and adjoining countries should look for very large adults of some lampyrid having pigmentation resembling that of these giant larvae. *Lamprocera* might be an alternative for *Cratomorphus*.

The specimens will be deposited in the U. S. National Museum.